Arrhythmia in stem cell transplantation.

Journal: Card Electrophysiol Clin

Publication Year: 2015

Authors: Shone O Almeida, Rhys J Skelton, Sasikanth Adigopula, Reza Ardehali

PubMed link: 26002399

Funding Grants: Preclinical evaluation of human embryonic stem cell-derived cardiovascular progenitors in a large animal model , Preclinical evaluation of human embryonic stem cell-derived cardiovascular progenitors in a large animal model

Public Summary:
This is a review on the electromechanical properties of the transplanted cells and how absence of gap junction and lack of functional integration may lead to arrhythmias.

Scientific Abstract:
Stem cell regenerative therapies hold promise for treating diseases across the spectrum of medicine. While significant progress has been made in the preclinical stages, the clinical application of cardiac cell therapy is limited by technical challenges. Certain methods of cell delivery, such as intramyocardial injection, carry a higher rate of arrhythmias. Other potential contributors to the arrhythmogenicity of cell transplantation include reentrant pathways caused by heterogeneity in conduction velocities between graft and host as well as graft automaticity. In this article, the arrhythmogenic potential of cell delivery to the heart is discussed.